EINSTEIN'S RELATIVITY
WARPED MINDS, BENT TRUTHS

In his relativity theories, Einstein attempted to express the forces of nature as geometrical equations, but failed to explain the physical universe in ways that Newtonian, non-relativistic calculations can.

Part 2 of 2

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PART II: GRAVITY TAKEN LIGHTLY
How Gravitation Taught Scientists to Bend the Truth

Having succeeded in killing the aether by creating the science of subjective physical measurements, known as the Special Theory of Relativity (STR), Einstein set out to explain everything beyond the atomic scale. Once more he wanted to build theory on postulates and geometry, but instead of creating clarity he paved the way for scientific mysticism. Now, many regard the General Theory of Relativity (GTR) as more relevant for creating *Star Trek* graphics than explaining mundane phenomena such as how to reach Mars by spaceship.

Falling from Rooftops

Feeling safe that the STR and Minkowski-space were the key to higher truths, Einstein set out to explain accelerated movements—the behaviour of bodies changing their speed as time passes. According to Einsteinian mythology, Einstein one day read in the local newspaper the story of a man who had fallen from a rooftop and after painfully reaching the ground declared he had experienced a wonderful feeling of weightlessness. Einstein took it as a revelation. If accelerating with the same change of speed caused by gravitation cancels out gravitation, thus achieving weightlessness, could it be that accelerating upwards will cause a feeling of weight indistinguishable from gravitation? In a so-called *Gedankenexperiment* (thought experiment) Einstein pictured a man, enclosed in an elevator, with no previous knowledge of this world. When the lift starts to accelerate, the man feels an extra force on his body; but not knowing it is acceleration, he believes his increased weight must be due to a gravitational field.[28]

This gave birth to the postulates of the new General Theory. Gravitation is indistinguishable from any accelerating mechanical force in nature. Gravitation works on bodies due to their mass, not due to their nature. Everything not gravitational will obey the Special Theory of Relativity.[29] However, there are flaws in the argument that are obvious even to a high-school student. Mechanically accelerated movements demand some source of energy. No source of energy is infinite. Thus, all mechanical forces will eventually be used up and acceleration will come to an end. Gravitational pull, on the contrary, never comes to an end. If we give our man in the elevator a clock and ask him to observe his forces as a product of time, their dwindling off will make him realise the fallacy of the first postulate.[30]

Even the second postulate could have been somewhat premature. In his lifetime, Einstein had every possibility of correcting his mistakes, but it was American inventor T. Townsend Brown who proved in 1929 that electrically charged objects become lighter in a gravitational field free from other electrostatic forces.[31]

Later, after Einstein's death in 1955, other experimenters achieved even better results—such as Evgeny Podkletnov, who achieved a two per cent reduction of gravitation by using a spinning, circular, magnetically charged disc lifting inert, non-magnetic objects.[32]

Thus, the nature of an object in a gravitational field is not altogether unimportant. For latter-day UFO believers, these phenomena are common knowledge: alien spacecraft counteract gravitational force by means of highly intense, pulsating and rotating electromagnetic fields. Even governmental agencies and scientists working with the UFO problem now take this for granted.[33]

When it comes to the STR, we have already seen it shattered by experiments known to Einstein when he was working on the GTR—experiments which showed that not all movements are relative. There are indeed simple means to determine whether you are moving or at rest. There are absolute frames of reference, as proved by Georges Sagnac in 1913 and by later researchers using spinning ring interferometers.

Thus, Einstein set out to build a new theory on unsecured ground, with postulates that were either disproved or not yet proved at all. And even stranger, the postulates in the GTR and the STR have no inherent logic or connection: the two theories are simply two altogether different theories—not two versions of one theory, as claimed!

Curving Paper

Perhaps unaware of these objections, Einstein set out to create a geometrical theory of gravitation, claiming he was extending his STR to a new domain. The grand idea was based on Professor Hermann Minkowski's observation that four-dimensional space-time is a mathematical manifold, where accelerated movements will follow a curved path in the four-dimensional paper-world. But instead of making curved paths on paper, why not curve the paper instead and let accelerated objects follow the shortest path between two points (geodesic) in the curved world?

The reason for this seemingly advanced mathematical trick was not to gain better knowledge of the forces involved; it was the desire to pursue an old German dream to express the forces of nature as geometrical equations.

Contrary to popular belief, this idea did not stem from Einstein: two German mathematicians presented it more than 70 years earlier. One was Carl Friedrich Gauss (1777–1855), who introduced the idea of multi-dimensional "spaces"; the other was one of the really great mathematical geniuses of all ages, Hermann Riemann (1826–66), who developed the complete mathematical tools and concepts for curved multi-dimensional "spaces". In 1854 Riemann put forth a complete draft for a theory of gravitation, transforming Newton's laws of forces into a geometrical description of geodesic movements in curved spaces.[34, 35] But even in doing so, Riemann never meant to counteract Newton's discoveries; he only wanted to create some geometrical beauty.

He not only said that Einstein had been inspired by Gerber's non-relativistic equations, but accused him of outright forgery.

According to his biographers, Einstein knew nothing of Gauss's and Riemann's works. It was assumed that his ideas only came from Minkowski, who for sure knew of them. Unfortunately for Einstein, Minkowski died of peritonitis in 1909, just a few months after having given Einstein these new ideas, so Einstein had to ask his friend Michael Grossmann what they were all about.[36] Later, British mathematician Ebenezer Cunningham (1881–1977) wrote an article on the subject, published in *Nature* in February 1921, stating that "no one knows if he [Einstein] would ever have reached so far without the genius of Minkowski".

Today, Grossman's work is seen to have provided the mathematical formalism of the GTR. But it may be worth remembering that the formalism was not all due to the Minkowski–Grossmann–Einstein "team", as we would say today. Another well-known contender had entered the scene with the same theory: mathematician David Hilbert (1862–1943). On 20 November 1915, he presented the full concept in Göttingen; five days later, Einstein presented his paper at the Prussian Academy.[37] Later, Einstein accused Hilbert of having stolen his ideas when he had visited him—but had he really? Had they not all "stolen" a little from previous geniuses and thrown in some of their own work? Isn't this what all theoretical speculations are about, when you are not in a secluded laboratory making your own discoveries? As is soon to be proved, professional peeking and borrowing were not such uncommon deeds after all. And who then deserves the glory—one or many?

Mercurial Feats

From Einstein's 64-page paper on the mathematical formalism for gravity in four-dimensional "space-time", published in *Annalen der Physik* in 1916,[38] three consequences could be deduced: (a) the orbit of a small planet close to a central, perfectly spherical Sun; the orbits of larger planets far from the Sun seemed mathematically impossible to solve; (b) the bending of light as it passed a very heavy object (e.g., the Sun); and (c) the red shift of light in a strong gravitational field (reduction of the frequency of light). These were the so-called "classical tests".

Einstein claimed innocently that he had no knowledge of or intention to solve such problems; they magically "popped out of his formalism" as a gift to science, in keeping with his message of a lofty science remote from mundane life that once in a while blesses practical life with unforeseen gifts.

But all these "classical tests" had some strange *déjà vu* to them, as the informed were soon to discover. The first of the tests concerned the most ready candidate because of its strange orbit: Mercury, the closest planet to our assumedly spherical Sun. This orbit shifts its perihelion (closest approach to the Sun) by approximately 574 arc-seconds per 100 years. Freundlich gave Einstein the number for the Mercury perihelion shift as 45 arc-seconds per year, and Einstein adjusted his GRT so that it matched the perihelion number.[39]

Einstein used a method called "classical approximation", and he assumed that the GTR must produce classical equations if gravitational fields are "weak" and that some new equations applied when gravitation is "strong". But when it came to the equations expressing Mercury's orbit, there was something strange. They not only popped out of the GTR formalism, they resembled perfectly, to the most minute detail, the equations of another German: schoolteacher Paul Gerber, who had published them 18 years earlier in 1898.[40] His equations were based on the assumption that the gravitational forces spread with a finite speed, c, and that their interaction with bodies depended on their speed.[41]

Physicist Ernst Gehrcke (1878–1960), who had previously criticised Einstein in 1911, brought the whole affair into public view as soon as he had read the GTR paper. He not only said that Einstein had been inspired by Gerber's non-relativistic equations, but accused him of outright forgery. Once more, the same strange situation repeated itself as had happened on previous occasions when someone criticised Einstein: he ran out of arguments. Not until four years later did Einstein comment upon the accusations, stating: "The experts are not only in agreement that Gerber's derivations are wrong through and through, but the formula cannot be obtained as a consequence of the main assumptions made by Gerber. Mr Gerber's work is therefore completely useless, an unsuccessful and erroneous theoretical attempt."[42]

As one digs into the matter, one is compelled to ask: how can a set of equations that successfully describe the perihelion of Mercury be useless, erroneous and unsuccessful? And how can the same equations, when they appear in the GTR, suddenly become a stroke of genius? Furthermore, if Einstein was such a genius, why did he not explain what was wrong with Gerber's line of thinking? Why did he have to wait for four years and then let others defend him? And why didn't the defenders explain what was wrong, other than to make accusations like "He copied things which had long been known to every worker in the field..."?[43]

Starry-Eyed Professors

The second "classical test" was the bending of light from distant stars as they pass a massive object like the Sun. The argument depended on light having some "mass" that makes gravitational attraction possible between photons and a massive object like our Sun. As one may remember, photons have a mass defined by m = E/c. When this is put into the Newtonian equations, deviation from the straight line can be calculated.

This was done, even before there was any $E = mc^2$, by German astronomer Johann Georg von Soldner (1776–1833) as early as 1801. According to these calculations based on the photon theory, there should be a deflection of 0.84 arc-seconds for light beams passing very close to the Sun. This number was later heavily attacked by Einstein and his friends. But then again, von Soldner did not know of the $E = mc^2$ formula because Maxwell had not even been born—and nobody at that time had any remote idea of the mass of the Sun. It was more an idea, rather than physical reality.

Those who liked to attack Gerber later used his formulas to calculate that light should be bent by approximately 2.5 seconds of arc, while according to Einstein's GTR the formula could lead to 1.75 seconds of deflection, depending on some factors of a variable nature. The difference between Einstein's and the older theories was that Einstein's GTR explained bending as a "curved space-time effect".[44]

Not too many took this calculation too seriously, but at least one man did: Oxford Professor Arthur Eddington (1882–1944), who according to Professor Subrahmanyan Chandrasekhar "was so confident of the correctness of the theory that, if left to himself, he would not even have planned to go on the eclipse expedition" to measure the deflection of the light of stars as they passed the darkened Sun.[45] Considering this *a priori* certainty as a case of biased judgement, could one expect the results to be impartial?

In 1919, Oxford University sent out two expeditions to photograph the eclipse of 29 May. One went to Sobral in Brazil, and another one, led by Professor Eddington, went to the island of Principe in the Gulf of Guinea, West Africa. Both expeditions carried identical equipment: a telescope of 343-cm focal length, photographic equipment and mirrors for making indirect photographs of the Sun.[46] This information is of vital importance, since the resolution of the equipment was in the order of two to three seconds of arc.

On the day of the eclipse, Sobral had excellent weather but Principe did not. At Principe it was cloudy, and the moist ocean air made the stars quiver, jump and shift place—almost like watching them through turbulent water. At Sobral, the heat of the day caused some optical distortions.

So what were the results? Today it is a sad historical fact that a few usable but badly distorted photographic images obtained at Principe were used as "the evidence". As Eddington himself complained, only two photographic plates were found to be useful—but the stars were poorly distributed and scattered at various distances from the Sun and not close to it, as the theory demanded. Despite these problems, Eddington was able—beyond belief—to measure less than 0.01-mm differences between photographs taken during the eclipse and plates taken later back in Oxford for comparison. This was assumed to be equivalent to a 1.63-arc-second deflection of starlight, according to Eddington. The GTR was finally verified and the press was jubilant: a new era was born. According to the headlines of the *New York Times* of 19 November 1919: "The Eclipse showed gravity variation—Diversion of light ray accepted as affecting Newton's principle, hailed as epoch making! Scientists call the discovery one of the greatest human achievements". One of the scientists referred to was none other than Arthur Eddington, who in 1930 was knighted for his contributions to science.

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But was it really "one of the greatest human achievements"? How could one be so sure when accuracy of the photographic equipment was less than that needed for making the calculations? And worse for the truth, if it exists: according to the far better results obtained at Sobral, where humidity and clouds were not the problem, results were in favour of Newton's calculations! Eddington solved this embarrassing problem by referring to these photographs as merely being used for checking the Principe results. Einstein was later to call this event one of his finest hours!

Many astronomers, believing the message from Principe, wanted to partake of the glory and tried to repeat the success during subsequent eclipses. Strangely, stars did not appear where they should have and as late as 1931, when Einstein's success was established abroad, Professor Erwin Freundlich reported to the Physics Association of Berlin, loudly lamenting that "they had left out of consideration observations that did not fit in with the results that they wanted to obtain".[47]

Einstein, now being a target of anti-Semitism in Germany, felt the sting of swastika-infected attacks but seemed strangely immune to criticism—or were such allegations just anti-Jewish criticism? Probably not. Even the so-called "red shift" in light-rays passing a strong gravitational field like the Sun's could not be confirmed, although the predicted value exceeded 100 times the accuracy of present-day interferometers. According to Sir Joseph Thomson, President of the Royal Society, writing in 1919: "If the [red] shift remains unproven as at present the whole theory collapses, and the phenomenon just observed by astronomers [at

Principe] remains a fact awaiting to be accounted for in a different way." By the late 1990s, scientists agreed that any red shift observed is not explained by the GTR, but believers firmly claim the theory to be valid for light-bending.[48, 49] Or was something else other than light being bent back then—perhaps the truth?

Despite such minor troubles, on 19 November 1919 Einstein was virtually canonised by the Royal Astronomical Society in London. The devil's advocate at the occasion, Professor Ludwik Silberstein, was not allowed to raise any relevant criticism until after the ceremony was over, when criticism was no longer of interest to the jubilant congregation.[50] Just as the GTR's success was based on *a priori* assumptions, so was glorification of the same theory, according to those present. But they could see nothing wrong with the procedure.

Part III: MYSTICAL AFTERMATH
How Einstein's theories gave birth to a new wave of mysticism

Einstein succeeded in influencing some of the most brilliant minds of his time, but his fame started to snowball and the theories of relativity were applied to all sorts of phenomena, even ones that Einstein himself had not meant them to explain. Instead of making this world appear more logical and sane, highly advanced mathematical arguments created an unintelligible universe that seemed only to be understood by a small elite who contributed little to the sanity of science. Science turned from useful work to the birth of modern-day alchemy.

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Embarrassing Ghosts of the Aether

By the beginning of the 1920s, Einstein's fame was established, but in Germany the swastika had raised its ugly head and rallies were raised against Jewish science in an effort to establish a pure arena of thinking. Einstein's lectures were disrupted by demonstrators. Einstein complained that he would not have been criticised if he had been "a German nationalist with or without a swastika, instead of a Jew with liberal international convictions".[51]

In 1921 he was awarded the Nobel Prize in Physics—not for the theories of relativity, but for the more simple theory of the photo-electric effect. Einstein waited until 1922 to fetch the prize, being more occupied with a world tour, lecturing on his ideas to laymen and scientists, much in the style of present-day media stars.

Meanwhile, just as everybody was convinced that the aether was dead and buried, a professor named Dayton Miller (1866–1941) at Case University—in which basement Albert Michelson set up his interferometer in 1887—decided to put the aether to a final test. He had built an enormous interferometer where light was made to go 210 feet [~64 metres] before reaching the optical measuring instruments. This new apparatus was three times as sensitive as Michelson's famous "zero-effect" instrument.

Miller was convinced that the "nearly-zero-effect measurements" of Michelson and Morley were due to the interferometer's placement in the basement. He assumed that if there was indeed an aether, it could not penetrate heavy objects and it would be better felt in free space and at higher altitudes—an idea also shared by the ageing Michelson.[52] So, to test his hypothesis, he put the instrument to work at sea level and later on Mount Wilson, California, covered only by a light canvas that should be easily penetrable by the devious aetheric winds. To ward off critics, Miller conducted various control experiments by exposing the instrument to unnatural heat so he could observe how various temperatures would influence the readings.

His experiments, conducted over a period of seven years (1920–26), were not confined to a mere 36 rotations as Michelson and Morley had done. Miller made a staggering 200,000 measurements covering various altitudes, various dates of the year, various hours of the day and various astronomical directions relative to the Earth's movement in its orbit. And he found statistically important results! Miller noted that when his measurements were plotted on sidereal time, they produced "...a very striking consistency of their principal characteristics...for azimuth and magnitude...as though they were related to a common cause... The observed effect is dependent upon sidereal time and is independent of diurnal and seasonal changes of temperature and other terrestrial causes, and...is a cosmical phenomenon."[53]

The conclusion after 200,000 precise observations was that the Earth is moving at a speed of 208 km/second towards the apex in the southern celestial hemisphere, towards Dorado, the Swordfish constellation. This was based on the assumption that the Earth pushes through a stationary aether in that direction. Another and also plausible conclusion would be that the solar system is being met by a moving aether in the opposite direction, like a huge, cosmic jet-stream rushing towards the stationary solar system (remember, some movements are indeed relative, so these conclusions are equivalent).[54]

What did Einstein have to say about these experiments, since he himself had never touched an interferometer? He only accused Miller of being the victim of "effects of effects", without going into any explanation of why this should be so and not wanting to give Miller any credit for having produced 199,964 more readings than Michelson and Morley—readings which he believed without any objections.

Miller naturally was hurt, and responded in January 1926: "The trouble with Prof. Einstein is that he knows nothing about my results... He ought to give me credit for knowing that temperature differences would affect results. He wrote to me in November suggesting this. I am not so simple as to make no allowance for temperature."[55]

And later, when the debate did not die out and Einstein could not defeat Miller's arguments, Einstein did the same as he had done to Gerber: he let others speak for him. This time he was defended by scientist Robert S. Shankland (1908–1982) and his associates who, after several consultations with Einstein, set out on what can best be called a defamation of Miller. In their analysis of the data, they picked those that showed no variation; and of those data where there *were* variations, they picked only the temperature control data. Thus the so-called "Shankland paper", published in April 1955, concluded that any deviation Miller had found was due to temperature differences.[56]

Thus Shankland was allowed to make his "speech" to the jury when the accused was no longer present. Unluckily for the historical record, the accused's attorney arrived too late to make any impression on "the educated public", only the "underground" was impressed and with little possibility of reopening the case.[57]

Superman in Hyperspace

Encouraged by the enthusiastic and even religious reception of the strange and utterly incomprehensible GTR, Einstein now emerged as a sort of scientific messiah for the post–World War I period. As dark clouds gathered over Europe and German Nazism started to evoke sinister images, Einsteinian wisdom came as a ray of light to a dark world.

Years later, in 1960, Louis Pauwels and Jacques Bergier published a trendsetting book, *The Dawn of Magic*,[58] wherein the pre–World War II era is characterised by a frenetic search for secret knowledge and supermen. There were the Rosicrucians, the sinister secret semi-religious Nazi lodges, Freemasonry and alchemy, and then there was Einstein! He is pictured in the book as the well-known mystical scientist, dressed in shabby clothes, his white hair creating an aura around his head, smiling as he sits in front of a blackboard filled with advanced mathematics. The book asks us to believe that this man is one of a selected group of supermen who can see into different realities. He typifies the scientist in the ivory tower.

By assuming such unproven facts, Einstein was soon to proclaim that his calculations had shown that the universe is a closed space-time world of finite size.

And who was more eager than Einstein to promote the myth in his own time? According to *Time* magazine: "…Einstein himself had warned his publishers there were not more than twelve people in the whole world who could understand his theory". Swedish plasma physicist Professor Hannes Alfvén (1908–1995) later complained: "The people were told that only Einstein and a few geniuses that were able to think in four dimensions could understand the true nature of the physical world. Science was something to believe in, not something that should be understood. Soon the bestsellers among popular science books became those that presented scientific results as an insult to common sense."[59]

In Michio Kaku's book *Hyperspace*,[60] illustrations show Einstein doing exactly what Professor Alfvén complained about: looking into multidimensional spaces and explaining to the uninitiated the complicated nature of hyperspace—the moniker for "spaces" with more than three "dimensions". But even believers had to admit there was a problem. How do we see the fourth dimension? The problem is, we can't. Higher dimensions are impossible to visualise, so it is futile even to try. Even experienced mathematicians and theoretical physicists who have worked with higher dimensional spaces for years admit that they cannot visualise them! Instead, they retreat into the world of mathematical equations. Except for Einstein himself, of course.

So for the time being, they had superman and the scientist in one and the same person and a myth was created. Anomalous phenomena researcher/writer and satirist Charles Fort (1874–1932) chided in *Wild Talents*: "Einstein was said to be useful, and in California, school children, dressed in white, sang unto him kindred unintelligibilities. In New York, mounted policemen roughly held back crowds from him, just as he, to make a system of thoughts, had clubbed many astronomical data into insensibility. He had taken into his system of thoughts irregularities of the planet Mercury, but had left out the irregularities of the planet Venus. Crowds took him into their holiday-making, but omitted asking what it was all about."[61]

And Superman himself admitted: "Since the mathematicians have invaded the theory of relativity, I do not understand it myself anymore."[62] Had he become the unwilling front figure of a movement whose message he could no longer grasp? If so, why did he not abandon it?

Shrinking the Universe

Despite problems like the GTR getting out of hand even for its creator, from the mid-1920s Einstein set out on his next project worthy of a Titan. He wanted to use relativity to create a new theory not only for Mercury's orbit and bent light but for encompassing the whole universe.[63] But there were some minor problems. No one knew the size of the universe. No one knew the total mass of all stars in the universe. No one knew how matter was distributed. No one knew of magnetic forces, of dust, of intergalactic ice, of the number of solar systems, of ages of stars—of anything but the fact that the number of stars seemed rather "infinite".

But for Einstein and latter-day theoretical scientists, such problems were minor obstacles. So Einstein assumed that all matter is distributed evenly in the universe and that there are no rotations in space, that everything is either still or moving in nice, linear paths. By assuming such unproven facts, Einstein was soon to proclaim that his calculations had shown that the universe is a closed space-time world of finite size. He estimated its age to be a few hundred million years, forgetting that the solar system is estimated to be some *billions* of years old.[64] By a stroke of magic, Einstein had shrunk the universe!

If all matter is evenly distributed and gravitation is working between stars, planets and galaxies, why hasn't this orderly blob of creation collapsed?

For reasons of principle, Einstein firmly rejected the idea of a rotating universe where centrifugal forces will drive stars and galaxies apart, although it was known by 1919 that the universe is not homogeneous and, indeed, that parts of it seem to rotate. His reasoning was based on the first postulate of the STR, which states that all movements are relative. According to Einstein, believing in rotating galaxies is to give rotation an absolute status—just as Sagnac showed in 1913. The case went so far that, in the mid-1920s, relativists asked Michelson to perform the Sagnac experiments all over again, using the spinning Earth as the rotating laboratory. Michelson complained that all they would achieve would be to prove that the Earth is spinning, nothing more.[65] And so they did, and yet Einstein refused to accept rotation!

According to plasma physicist Eric J. Lerner, Einstein's stubborn rejection of facts had a profound impact on cosmology at that time and is still haunting astrophysics today. "First, it introduced the idea of a finite universe, which resulted in a medieval cosmos, previously considered obsolete and antithetical to science itself. Second, the aesthetic simplicity of the assumption of homogeneity, combined with Einstein's prestige, embedded the assumption in all future relativistic cosmology. Third, perhaps most significant, it set a precedent by allowing the introduction of assumptions contrary to observations, in the hope that further observations will justify the assumptions. In the case of Einstein's cosmology it was hoped that, on scales larger than clusters and superclusters of galaxies, the universe would become smooth."[66]

Shift Happens

By the beginning of the 1930s, Einstein had become an international celebrity, but he was despised in Germany for his Jewish descent and criticised by Nazi scientists like Paul Weyland (1888–1972), who for years attacked his theories on a purely racial basis. Due to this ever worsening situation in his homeland, in December 1932 Einstein emigrated to the USA with his wife Elsa. In 1935 he accepted a teaching position at the Institute for Advanced Study at Princeton University, probably the most famous professor ever to hold a position there.

At Princeton, Einstein felt alienated because at heart he was a German, although he claimed to be an internationalist and openly supported the Jewish movement. To anyone reading his works and looking at pictures of the older professor, he seemed sad and frustrated. There were reasons for this: imminent war, the persecution of the Jews, his wife's bad health (she died in 1936) and his own failures to succeed in his work. His dream of the "theory of everything" had failed utterly: "...I locked myself into quite hopeless scientific problems—the more so since, as an elderly man, I have remained estranged from society here..."[67]

We do not need any more mathematics to explain the phenomenon; we need psychology—the psychology of science! How else could we explain how a world-celebrated genius increasingly refused to acknowledge facts? It seemed that by refusing to acknowledge spinning galaxies, inventing an homogeneous universe whose age he estimated to be less than the age of the Earth, fighting quantum physics, calling nature "ugly trees" and seeking to enter a world of "pure marble" ruled only by pure thought, he was on a flight from something into something else: not hyperspace, not science, but mysticism. It was in this period that Einstein exclaimed that the deepest emotion we are capable of is "the experience of the mystical". So true. But what is it that one is experiencing?

Then, there was Einstein the pacifist, internationalist, philosopher and humanist who signed a petition in favour of building the atomic bomb, only to excuse himself later by saying: "I do not regard myself as the father of the liberation of the nuclear energy. I only played an indirect role." Then he added: "I only served as a mailbox. They handed over to me a ready-to-sign letter; I had to sign!"[68] But did he really? Was the man in the ivory tower so alienated from the world that he was losing his grip on it?

It was in this period that things other than bombs exploded. The combined efforts of Carl Wirtz (1876–1939) and Edwin Hubble (1889–1953) showed that light from faraway stars seems redder the farther away they are—a phenomenon called "red shift". This could be explained if the Earth was embedded in a wall of gravitation or if the universe was expanding, as after an immense explosion. The nuclear bomb provided a sort of explanation, as one of the leading nuclear scientists, George Gamow (1904–68), suggested to Einstein that the reason why, in his model, the universe did not collapse was the fact that it may be inflating at a tremendous speed due to some primordial explosion, nuclear style.[69]

Today, scientists believing the Big Bang theory have retro-calculated the whole scenario down to the first billionth of a billionth of a second of creation. But if Walter Ritz was right, backtracking by studying the information we have today is more than difficult: it is impossible. But the Big Bangers did not care because it added importance to the finalistic picture Einstein endorsed: a small, finite universe with a finite beginning and possibly a finite ending. One way or the other, the Bomb seemed to have done something good for a tearful Einstein.

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Non-Relativity Rules

On 18 April 1955, Einstein died of a ruptured aortic aneurysm, a condition usually caused by copper deficiency. His death came a few weeks after publication of the Shankland paper that defamed Dayton Miller with Einsteinian blessing. Einstein's brain was preserved and sectioned for further research to enable scientists to poke into the material basis for mystical genius. Subsequent studies showed that the brain was nothing but a quite ordinary brain in size but with part of the frontal lobe missing and a higher than normal number of associative nerve cells. Could this explain Einstein's way of thinking? Was a secret formula discovered, linking neurons with visions?

The Special Theory of Relativity lingered on as a basic tool for particle science, and it proved useful in a number of cases but not in others. Atomic clocks were created that were accurate to the nanosecond, and when synchronised by radio signals they had to be corrected according to non-relativistic Sagnac formulas. The same holds true for satellites orbiting the Earth: they all rely on non-relativistic time-keeping. The laser ring gyro was invented, which keeps track of relative rotation between Earth and aeroplanes according to non-relativistic principles.[70]

The red shift in gravitational fields has been observed, but is not a confirmation of anything Einsteinian. The strange perihelion of Mercury, whose calculation was once hailed as one of Einstein's finest hours, can be calculated according to Newtonian mathematics based on new knowledge of the irregular shape or "oblateness" of the Sun, or even Gerber's way.[71] Only the deviation of electromagnetic signals passing the Sun remains. But does it really? Nowadays, the Einsteinian formula is tested with radio signals from radio sources in the universe as they pass the Sun. But these signals have greater wavelengths than light, so a phenomenon called "aberration" appears, whereby signals bend naturally without the need for gravitation to explain it.[72] And by the way, whoever would claim that the Sun does not have a magnetic field that could deflect electromagnetic signals?

Gravitational waves predicted by Einstein as waves in four dimensions, so-called quadrupole waves, have long since been detected and have been proven to be simple dipole radio waves. This became evident in 1956, when inventor Thomas T. Brown, working with the US Navy, was issued his patent on a gravitational wave detector using simple dielectrical materials from nature—not high-technology science at all.[73] And probably worst of all: Brown's experiments may have been known to Einstein as early as the 1930s.

And there ends our story. Readers are free to believe what they want. Einstein was in many respects a great theoretical thinker and had a productive mind, but, unfortunately for him, his theories of relativity show us one thing: when a great mind errs, the error becomes great. Instead of admitting and correcting the shortcomings of his theories, he instead added to misunderstandings and unnecessary disputes. ∞

About the Author:

Born in Norway in 1947, Bjørn Johan Øverbye, MD, PhD, is a practising medical doctor, writer, researcher and lecturer. He studied physics at the University of Oslo from 1966 to 1969 and finished his MD degree at the same university in 1976, receiving his licence to practise in 1978. In 1984 he was awarded a PhD in Complementary Medicine from the International Open University, Sri Lanka. He is the author of several books on alternative medicine plus a scientific report on cellphone hazards ("The Biophone Project", 2003). He has conducted research into bioresonance and developed biophysical theories and diagnostic methods for treating diseases using biophoton equipment, electromagnetism and bioresonance. Dr Øverbye supports the notion that the aether is a key concept in both physics and energy medicine. This interest led him to investigate how Einstein prematurely killed a useful concept and might have contributed to more problems than solutions.

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